

Date: Sun, 6 Mar 94 04:30:42 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #51
To: Ham-Homebrew

Ham-Homebrew Digest Sun, 6 Mar 94 Volume 94 : Issue 51

Today's Topics:

 50uA Meters - Help from Dayton?
 GPS Receiver Boards (2 msgs)
 Series Diodes (was Re: Paralleling Power Di
 Tuner-tuner
 Vertical Antenna??
Want to obtain a very cheap high gain antenna

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 28 Feb 94 16:53:17 GMT
From: agate!howland.reston.ans.net!news.moneng.mei.com!uwm.edu!ogicse!
news.tek.com!gvgpsa.gvg.tek.com!gold.gvg.tek.com!gvgadg.gvg.tek.com!
groverc@ucbvax.berkeley.edu
Subject: 50uA Meters - Help from Dayton?
To: ham-homebrew@ucsd.edu

I am in need of two small (<1.75") 50uA movement meters to finish a
project. Since I live in the boondocks I wonder if anyone can help
me find such items. Perhaps someone going to Dayton would be willing
to look for me? Any help very much appreciated.
By the way, I have looked in all the "regular" catalog sources
to no avail. I think that these are going to be swap meet items.

WT6P

Date: Fri, 4 Mar 94 18:34:14 GMT
From: ihnp4.ucsd.edu!ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!
europa.eng.gtefsd.com!ulowell!xn.ll.mit.edu!ll.mit.edu!wjc@network.ucsd.edu
Subject: GPS Receiver Boards
To: ham-homebrew@ucsd.edu

In article <jyoungberg.1.000B87CC@draper.com>, jyoungberg@draper.com (James W. Youngberg) writes:

|> I've followed various GPS threads as they've come and gone. In order to pose
|> volume/price arguments to folks in the business, what would be the size of the
|> amateur market for GPS engines?
|>
|> Presume an engine consists of the entire RX, minus antenna, including a data
|> port (probably NMEA 0183), on a PC board. Examples are currently manufactured
|> by Rockwell, Magellan, Canadian Marconi, Plessey, and Trimble, among others.
|> Marketed in the \$500 class for single-unit quantities.
|>
|> Skip, K1NKR
|>

How many channels would I get for \$500?

Bill Chiarchiaro N1CPK
wjc@ll.mit.edu

Date: 4 Mar 1994 23:38:11 GMT
From: news.cerf.net!pravda.sdsc.edu!nic-nac.CSU.net!news.Cerritos.edu!
news.Arizona.EDU!math.arizona.edu!noao!ncar!gatech!europa.eng.gtefsd.com!
news.umbc.edu!eff!news.kei.com!ihnp4.ucsd.edu
Subject: GPS Receiver Boards
To: ham-homebrew@ucsd.edu

The Garmin GPS-10 receiver board is less than \$350 in quantities of 2 (two). It is an 8-channel receiver with NMEA output. They can supply a program that runs on a PC and displays the data from the GPS-10, connected to one of the serial ports. The above price includes the antenna.

One of the reasons that we like it is that it only consumes 1 watt (0.2A @ 5V). Garmin can be

reached at (800)800-1020. Note that this is not an endorsement, etc., etc.....

Steven Hunter

Date: Fri, 4 Mar 1994 20:10:40 GMT
From: ihnp4.ucsd.edu!newshub.sdsu.edu!ucsnews!sol.ctr.columbia.edu!
howland.reston.ans.net!vixen.cso.uiuc.edu!sdd.hp.com!col.hp.com!srgeprp!
alanb@network.ucsd.edu
Subject: Series Diodes (was Re: Paralleling Power Di
To: ham-homebrew@ucsd.edu

Michael Stein (OSYSMAS@MVS.OAC.UCLA.EDU) wrote:

I wrote:

: >I don't think the capacitors are needed either.

: The RCA manuals points out that the capacitance of a diode is
: small. In a series string of diodes the later diodes are in
: parallel with the normal capacitance-to-ground all wiring has.
: Since this is larger than the capacitance of the first diode in
: the string, then on a transient the first diode will see the
: majority of the total voltage. The capacitors across the diodes
: swamp out the capacitance to ground resulting in even division of
: the voltage.

I already commented on protecting the diodes from transients. I think the best way is with a transient suppressor network on the transformer primary. If you must do it on the secondary side, a single capacitor across the transformer winding would work as well as separate capacitors across each diode.

It's true that the reverse (AC component) voltage will divide across the diodes inversely to the capacitances. However, the voltage changes so slowly at 60 Hz, and the junction capacitance is so small, that the charging current should be small enough not to hurt the diodes.

AL N1AL

Date: 05 Mar 1994 01:00:03 GMT
From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!news.umbc.edu!eff!
news.kei.com!yeshua.marcam.com!charnel!olivea!koriel!news2me.EBay.Sun.COM!
jethro.Corp.Sun.COM!exodus.@ihnp4.ucsd.edu
Subject: Tuner-tuner
To: ham-homebrew@ucsd.edu

In the March QST, kinda near the back, there's an ad from Palomar for a gadget called the "tuner-tuner." (For all I know this ad has been in every QST since 1927, but this is the first time *I* noticed it.)

What the ad says this gadget does is allow one to adjust one's antenna tuner precisely without having to transmit. Operation is described as:

1. Put the gadget between the transceiver and the tuner (I assume they mean electrically, not physically)
2. Flip the knob on the gadget from OFF to TUNE. A strong noise will be heard in the transceiver's speaker.
3. Twiddle knobs on the antenna tuner until the noise goes away.
4. Flip the knob on the gadget from TUNE to OFF.
5. Transmit away, at 1:1 SWR.

It's not stated, but I assume that the tuner will be adjusted for the frequency the receiver was tuned to.

Now, my questions:

1. just how does this gadget work?

It seems to me that what it's doing is sending low-power broadband noise out through the tuner, line, and antenna, and passing the reflected noise back to the receiver. When the tuner is adjusted right, the impedance matches and there is no reflections, hence no noise for the receiver to hear. But how does the receiver not hear the original noise source (when answering, be aware I've not yet figured out how a SWR meter manages to measure direct and reflected power separately either.)

2. how can I build one? [this is why this is in r.r.a.homebrew and not .misc]

Looking at the picture, there's a knob and a case. Palomar's asking \$100 for this beast, so given labor, Palomar's markup, and the cost of knobs and cases these days, I figure total parts cost has to be about \$10 max.

I have a sneaking suspicion that this is a well known hack that's been around since CW first replaced spark, but I haven't found anything in the books I've looked at (ARRL Handbook and Antenna Book.)

Rich

--

Rich McAllister (rfm@eng.sun.com)

Date: Fri, 4 Mar 1994 15:20:22 GMT

From: amd!netcomsv!netcomsv!netcomsv!bongo!julian@decwrl.dec.com

Subject: Vertical Antenna??
To: ham-homebrew@ucsd.edu

In article <ZC1J3m0.sak1@delphi.com> Steve Kittelsen <sak1@delphi.com> writes:
>I would like to get some feedback on a vertical antenna for the reception of
>the 108-138 MHz aircraft band. I currently use a discone antenna, that seem
>to work much better than a tuned dipole.

Must be something wrong with your dipole. I assume it is set up as a vertical?

> I have seen 144 MHz antennas with a gain of 9 dB, but what will
>the gain be at 125 MHz?? How can I make one or where can I get one?

A 144 MHz antenna will probably have little gain at 125 MHz.
But these "High Gain Omni-Directional Verticals" are neither. They exhibit gain because they are not omni-directional.

These antennas exhibit a squished pattern that looks to the horizon. They have a nice big null overhead. This is not what you want to listen to aircraft, unless you intend to listen to aircraft on the ground that are all around you. If you wish to listen to aircraft on the ground at an airport, then a Yagi is what you need.

For overhead omni-directional listening on the aircraft bands, I suggest a groundplane.

If you want to know what the best antenna is, go to an airport. Look at their antennas. Bear in mind that the Air Traffic Controllers have the following criteria: Bigger budget than you, 100% reliability, best performance. Those criteria are usually met with groundplane and hairpin groundplane antennas.

If you really want to do it right, ask at their radio shop - which will be on the airport property or nearby - what make and model they use.

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Julian Macassey, N6ARE julian@bongo.tele.com Voice: (310) 659-3366
Paper Mail: Apt 225, 975 Hancock Ave, West Hollywood, California 90069-4074

Date: 28 Feb 94 07:42:20 GMT
From: dog.ee.lbl.gov!agate!congo.EECS.Berkeley.EDU!rsutton@ucbvax.berkeley.edu
Subject: Want to obtain a very cheap high gain antenna
To: ham-homebrew@ucsd.edu

Has anyone a suggestion for a very cheap highly directional
2M antenna?

Homemade Yagi?

Homemade Dish? (Do hams uses dish on 2M)?

If you have references, please share them.

Thanks for any help,

Roy

End of Ham-Homebrew Digest V94 #51
